

1. (Amended) A scanning exposure apparatus for transferring a pattern of a master onto each of a plurality of shot regions defined on a substrate, while synchronously scanning the master and the substrate, wherein the plurality of shot regions are defined such that a plurality of rows each including plural shot regions are arrayed, and said apparatus comprises:

a master stage for moving the master;

a substrate stage for moving the substrate; and

a controller for controlling movement of said substrate stage during scanning exposure of the plurality of shot regions so as to assure that a setting distance in which said substrate stage is moved guarantees that a synchronization error between said master stage and said substrate stage falls within an allowable range after said substrate stage is accelerated up to a scan speed for the scanning exposure,

wherein said controller controls the movement of said substrate stage such that a setting distance for a first shot region, which is exposed first, upon a change in the row, is set to be longer than a setting distance for other shot regions.

2. (Amended) The apparatus according to claim 1, wherein said controller controls continuous movement of said substrate stage in accordance with a common setting distance for shot regions other than the first shot region among a plurality of shot regions belonging to one row.

3. (Amended) The apparatus according to claim 1, wherein said controller controls continuous movement of said substrate stage in accordance with a setting distance determined for each row of shot regions.

4. (Amended) The apparatus according to claim 1, wherein the setting distance is determined on the basis of a setting time until the synchronization error between said master stage and said substrate stage falls within an allowable range after said substrate stage is accelerated up to a scan speed for scanning exposure.

5. (Amended) A scanning exposure apparatus for transferring a pattern of a master onto each of a plurality of shot regions defined on a substrate, while synchronously scanning the master and the substrate, wherein the plurality of shot regions are defined such that a plurality of rows each including plural shot regions are arrayed, and said apparatus comprises:

a master stage for moving the master;

a substrate stage for moving the substrate; and

a controller for controlling movement of said substrate stage during scanning exposure of the plurality of shot regions so as to assure that a setting distance in which said substrate stage is moved guarantees that a synchronization error between said master stage and said substrate stage falls within an allowable range after said substrate stage is accelerated up to a scan speed for the scanning exposure,

wherein said controller controls movement of said substrate stage in accordance with a setting distance determined for each of the plurality of rows.

6. (Amended) The apparatus according to claim 5, wherein the setting distance is determined on the basis of a setting time until the synchronization error between said master stage and said substrate stage falls within an allowable range after said substrate stage is accelerated up to a scan speed for scanning exposure.

7. (Amended) A scanning exposure method of transferring a pattern of a master onto each of a plurality of shot regions defined on a substrate, while synchronously scanning the master and the substrate, wherein the plurality of shot regions are defined such that a plurality of rows each including plural shot regions are arrayed, and said method comprises:

the control step of controlling movement of a substrate stage during scanning exposure of the plurality of shot regions so as to assure that a setting distance in which the substrate stage is moved guarantees that a synchronization error between a master stage and the substrate stage falls within an allowable range after the substrate stage is accelerated up to a scan speed for the scanning exposure,

wherein, in the control step, the movement of the substrate stage is controlled such that a setting distance for a first shot region, which is exposed first, upon a change in the row, is set to be longer than a setting distance for other shot regions.

8. (Amended) The method according to claim 7, wherein, in the control step, continuous movement of the substrate stage is controlled in accordance with a common setting distance for shot regions other than the first shot region among a plurality of shot regions belonging to one row.

9. (Amended) The method according to claim 7, wherein, in the control step, continuous movement of the substrate stage is controlled in accordance with a setting distance determined for each row of shot regions.

10. (Amended) The method according to claim 7, wherein the setting distance is determined on the basis of a setting time until the synchronization error between the master stage and the substrate stage falls within an allowable range after the substrate stage is accelerated up to a scan speed for scanning exposure.

11. (Amended) A scanning exposure method of transferring a pattern of a master onto each of a plurality of shot regions defined on a substrate, while synchronously scanning the master and the substrate, wherein the plurality of shot regions are defined such that a plurality of rows each including plural shot regions are arrayed, and said method comprises:

the control step of controlling movement of a substrate stage during exposure of the plurality of shot regions so as to assure that a setting distance in which the substrate stage is moved guarantees that a synchronization error between a master stage and the substrate stage falls within an allowable range after the substrate stage is accelerated up to a scan speed for the scanning exposure,

wherein, in the control step, movement of the substrate stage is controlled in accordance with a setting distance determined for each of the plurality of rows.

12. (Amended) The method according to claim 11, wherein the setting distance is determined on the basis of a setting time until the synchronization error between the master

stage and the substrate stage falls within an allowable range after the substrate stage is accelerated up to a scan speed for scanning exposure.

13. (Amended) A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses, for performing various processes, including the scanning exposure apparatus defined in claim 1, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses.

14. The method according to claim 13, further comprising the steps of:

connecting the manufacturing apparatuses by a local area network; and

communicating information about at least one of the manufacturing apparatuses between the local area network and an external network of the semiconductor manufacturing factory.

15. The method according to claim 13, further comprising the step of acquiring maintenance information of the scanning exposure apparatus by accessing a database provided by a vendor or user of the scanning exposure apparatus via the external network.

16. (Amended) A semiconductor manufacturing factory comprising:

manufacturing apparatuses, for performing various processes, including the scanning exposure apparatus defined in claim 1;

a local area network for connecting said manufacturing apparatuses; and

a gateway for allowing the local area network to access an external network of the factory,

wherein information about at least one of said manufacturing apparatuses is communicated.

17. (Amended) A maintenance method for the scanning exposure apparatus defined in claim 1, which is installed in a semiconductor manufacturing factory, said method comprising the steps of:

causing a vendor or user of the scanning exposure apparatus to provide a maintenance database connected to an external network of the semiconductor manufacturing factory;

authenticating access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information accumulated in the maintenance database to the semiconductor manufacturing factory via the external network.

18. The apparatus according to claim 1, further comprising:

a display;

a network interface; and

a computer for executing network software,

wherein maintenance information of the scanning exposure apparatus can be communicated via a computer network.

19. The apparatus according to claim 18, wherein the network software is connected to an external network of a factory where the scanning exposure apparatus is installed, provides on said display a user interface for accessing a maintenance database provided by a vendor or a user of the scanning exposure apparatus, and enables obtaining information from the database via the external network.

20. (Amended) A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses, for performing various processes, including the scanning exposure apparatus defined in claim 5, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses.

21. The method according to claim 20, further comprising the steps of:
connecting the manufacturing apparatuses by a local area network; and
communicating information about at least one of the manufacturing apparatuses between the local area network and an external network of the semiconductor manufacturing factory.

22. The method according to claim 21, further comprising the step of acquiring maintenance information of the scanning exposure apparatus by accessing a database provided by a vendor or user of the scanning exposure apparatus via the external network.

23. (Amended) A semiconductor manufacturing factory comprising:

manufacturing apparatuses, for performing various processes, including the scanning exposure apparatus defined in claim 5;

a local area network for connecting said manufacturing apparatuses; and

a gateway for allowing the local area network to access an external network of the factory,

wherein information about at least one of said manufacturing apparatuses is communicated.

24. (Amended) A maintenance method for the scanning exposure apparatus defined in claim 5, which is installed in a semiconductor manufacturing factory, said method comprising the steps of:

causing a vendor or user of the scanning exposure apparatus to provide a maintenance database connected to an external network of the semiconductor manufacturing factory;

authenticating access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information accumulated in the maintenance database to the semiconductor manufacturing factory via the external network.